PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

Thomas M. BREUEL et al. Group Art Unit: 2178

Application No.: 10/064,892 Examiner: C. PAULA

Filed: August 27, 2002 Docket No.: 111744

For: METHOD AND SYSTEM FOR DOCUMENT IMAGE LAYOUT DECONSTRUCTION AND REDISPLAY SYSTEM

DECLARATION UNDER 37 C.F.R. §1.131

I, William C. Janssen Jr., a named inventor in the above-identified application, hereby declare and state:

1. This Declaration is submitted as evidence that the subject matter claimed in Claims 1, 3-16 and 18-28 of the above-identified application was conceived by the named inventors and reduced to practice in the United States prior to July 13, 2001, the U.S. filing date of U.S. Patent Application Publication No. 2003/0014445 Al (Formanek et al.).

2. I am a named co-inventor in the above-identified application.

3. I have personal knowledge of the function and existence of the computer programs, all dated prior to July 13, 2001, that appear in the directory listing set forth in Exhibit A and in the screenshots depicted in Exhibit C(1), attached to this Declaration.

4. In the directory listing of the computer programs identified in Exhibit A and the screenshots depicted in Exhibit C(1), dates and other material that could indicate dates have been masked out, to the extent practicable, as permitted under the U.S. patent rules.

5. The invention that was reduced to practice in the computer programs identified in the directory listing in Exhibit A and represented by the screenshots depicted in Exhibit C(1), can be summarized as follows:

A system and method of converting a document in a page-image format into a form suitable for an arbitrarily sized display, the method comprising in sequential order the following steps. A document, in a page image format, is deconstructed by at least one of physical segmentation and logical segmentation into a set of segmented image elements including at least one of blocks, lines, words, characters of text, groups of characters, and groups of non-text characters (see Exhibit B(1) and (2); Exhibit C(2); claims 1, 3 and 4). The deconstructed document is then synthesized into an intermediate data structure that is convertible into a commercially available format (see Exhibit B(2); Exhibit C(1); claim 1). The synthesizing includes integrating at least one of bitmapped images, including words in reading order, in an intelligible display layout and links to non-textual elements (see Exhibits B(1) and (2); Exhibits C(1) and (2); claims 6 and 7). The synthesizing also includes converting non-text image areas, layout properties and segmented image areas, into the intermediate data structure (see Exhibits B(1) and (2); Exhibits C(1) and (2); claim 5). The intermediate data structure is (1) capable of being stored in a storage device; (2) adaptable to at least one of display screen size, page size, resolution, contrast, color and geometry, at the time of display; and (3) adaptability supported by at least one of repagination of text, reflowing of text, logical links of text to associated text and non-textual content (see Exhibits B(1)-(4); Exhibits C(1) and (3); claims 8, 12 and 13). The intermediate data structure is then distilled using commercially available software for redisplay by converting the intermediate data structure into a format usable for an arbitrarily sized display (see Exhibits B(2)-(4); Exhibits C(1) and (3); claim 1). This includes redisplaying the document in human readable format to include (1) at least one of an electronic book format, Internet browsable format and a print format; or (2) a device specific display format (see Exhibits B(3) and (4); Exhibit C(3); claims 9-11). The intermediate data structure is automatically adaptable at the time of

display to constraints of display devices or circumstances of viewing (see Exhibit B(2); Exhibit C(1); claim 1).

6. The invention that was reduced to practice in the computer programs identified in the directory listing in Exhibit A was conceived prior to July 13, 2001. This invention is claimed in the above-identified application.

7. On August 9, 2006, the inventions represented by the programs listed in Exhibit A were used to produce the intermediate format listed in Exhibit B(2)and thereby show the reduction to practice of a system and method of converting a document in a page-image format into a form suitable for an arbitrarily sized display as described in paragraph 6 herein. Exhibit B(1) illustrates an electronically stored document (1) in a page-image format. Exhibit B(2) illustrates an intermediate data format (2) of the electronically stored file of document (1). Exhibit B(3) illustrates a dynamic reflow of the intermediate data format (2) into a first arbitrarily sized display. Exhibit B(4) illustrates a dynamic reflow of the intermediate data format (2) into a second arbitrarily sized display.

8. On or about March 2, 2007, programs listed in Exhibit A and represented in the screenshots depicted in Exhibit C(1), were applied to a document image, represented by Exhibit C(2). The progression of the applications is represented in Exhibit C(1). The first program, *BatchSegmenter*, identifies individual word images and their reading order, and writes out an analysis of the document giving that information. The second program, *chop.py*, reads this analysis, and creates a version of the document in intermediate data format. Exhibit C(3) shows a reflowed page of the intermediate format viewed in an HTML browser.

9. I hereby declare that all statements made herein of my own knowledge are true, and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and

the like so made are punishable by fine and/or imprisonment under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing therefrom.

Date: 3/20/07

William C. Janssen Jr.

Attachments:

Exhibit A
Exhibits B(1)-(4)
Exhibits C(1)-(3)

Exhibit A

```
% ls -l /project/cuda/janssen/seg1/chop.py /project/did/src/util/seg

-rwxr-xr-x   1 tbreuel  parc          80 Mar 11  [redacted] BatchSegmenter.sh

-rwxr-xr-x   1 tbreuel  parc          76 Mar 11  [redacted] ReflowHtml.sh
drwxr-xr-x   3 tbreuel  parc       25032 Feb 17  [redacted] data
-rw-r--r--   1 tbreuel  parc      163242 Mar 11  [redacted] seg.jar
-rwxr-xr-x   1 tbreuel  parc        1543 Feb 19  [redacted] show-rect
%
```

Exhibit B (1)

Real-Time Control of a Virtual Human Using Minimal Sensors

Norman I. Badler
Michael J. Hollick
John P. Granieri

Computer Graphics Research Laboratory
Department of Computer and Information Science
University of Pennsylvania
Philadelphia, Pennsylvania 19104-6389

1 Abstract

We track, in real-time, the position and posture of a human body, using a minimal number of 6 DOF sensors to capture full body standing postures. We use 4 sensors to create a good approximation of a human operator's position and posture, and map it on to our articulated computer graphics human model. The unsensed joints are positioned by a fast inverse kinematics algorithm. Our goal is to realistically recreate human postures while minimally encumbering the operator.

2 Background

Ideally, a virtual environment interface should be able to measure and recreate a participant's posture exactly. Rather than the traditional "disembodied hand" approach, we would like to generate a complete, realistically postured human image. However, the equipment needed to accurately track every body segment (or joint angle) of a human is costly and cumbersome. We face several questions: how closely must the virtual human's posture match the operator's, and how much information do we need to achieve this degree of realism?

As in other areas of VR, the degree of realism necessary depends greatly on the tasks we would like to perform [11]. We have concentrated on creating an interface that will allow a human participant to perform basic tasks, using a minimal number of sensors to derive feasible, reasonably accurate postures. Three pieces of information are essential for our posture reconstruction algorithm: the participant's view vector, center of mass, and the location of the end-effectors the participant will use to interact with the

Figure 1: Sensor Placement and Support Polygon

Exhibit B (2)

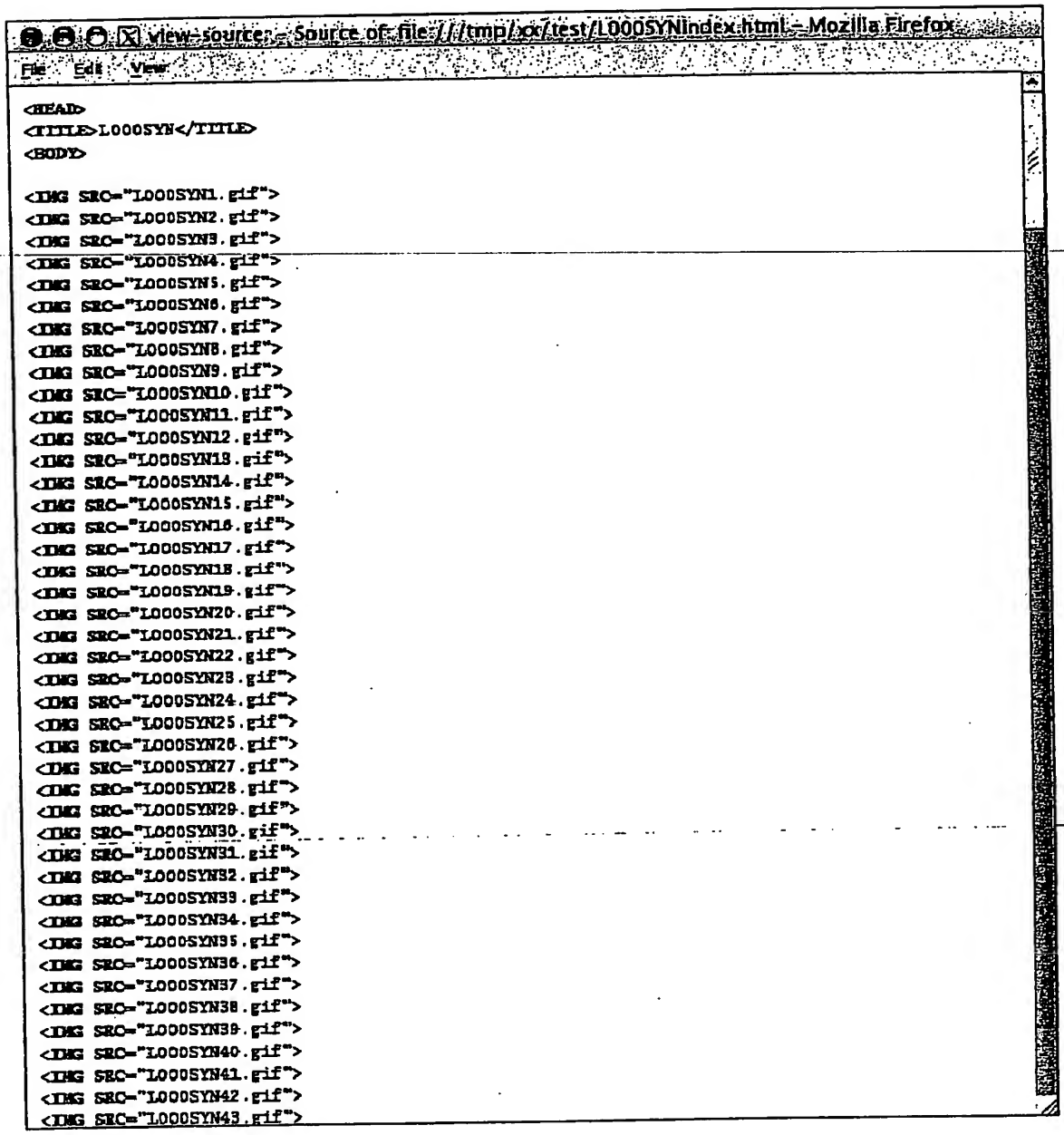
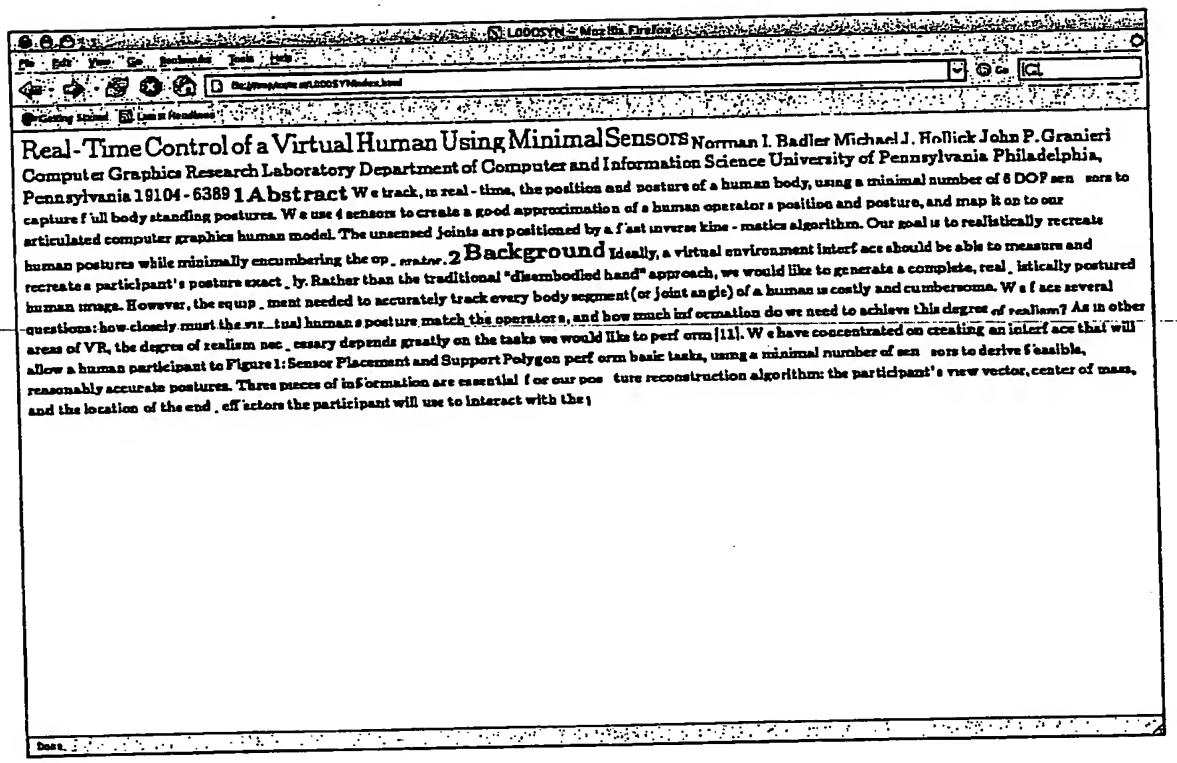

view-source: - Source of: file:///tmp/xx/test/L000SYNindex.html - Mozilla Firefox
File Edit View
<HEAD>
<TITLE>L000SYN</TITLE>
<BODY>
<IMG SRC="L000SYN1.gif">
<IMG SRC="L000SYN2.gif">
<IMG SRC="L000SYN3.gif">
<IMG SRC="L000SYN4.gif">
<IMG SRC="L000SYN5.gif">
<IMG SRC="L000SYN6.gif">
<IMG SRC="L000SYN7.gif">
<IMG SRC="L000SYN8.gif">
<IMG SRC="L000SYN9.gif">
<IMG SRC="L000SYN10.gif">
<IMG SRC="L000SYN11.gif">
<IMG SRC="L000SYN12.gif">
<IMG SRC="L000SYN13.gif">
<IMG SRC="L000SYN14.gif">
<IMG SRC="L000SYN15.gif">
<IMG SRC="L000SYN16.gif">
<IMG SRC="L000SYN17.gif">
<IMG SRC="L000SYN18.gif">
<IMG SRC="L000SYN19.gif">
<IMG SRC="L000SYN20.gif">
<IMG SRC="L000SYN21.gif">
<IMG SRC="L000SYN22.gif">
<IMG SRC="L000SYN23.gif">
<IMG SRC="L000SYN24.gif">
<IMG SRC="L000SYN25.gif">
<IMG SRC="L000SYN26.gif">
<IMG SRC="L000SYN27.gif">
<IMG SRC="L000SYN28.gif">
<IMG SRC="L000SYN29.gif">
<IMG SRC="L000SYN30.gif">
<IMG SRC="L000SYN31.gif">
<IMG SRC="L000SYN32.gif">
<IMG SRC="L000SYN33.gif">
<IMG SRC="L000SYN34.gif">
<IMG SRC="L000SYN35.gif">
<IMG SRC="L000SYN36.gif">
<IMG SRC="L000SYN37.gif">
<IMG SRC="L000SYN38.gif">
<IMG SRC="L000SYN39.gif">
<IMG SRC="L000SYN40.gif">
<IMG SRC="L000SYN41.gif">
<IMG SRC="L000SYN42.gif">
<IMG SRC="L000SYN43.gif">

Exhibit B (3)



Real-Time Control of a Virtual Human Using Minimal Sensors

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Computer Graphics Research Laboratory Department of Computer and Information Science University of Pennsylvania Philadelphia, Pennsylvania 19104 - 6389

1 Abstract

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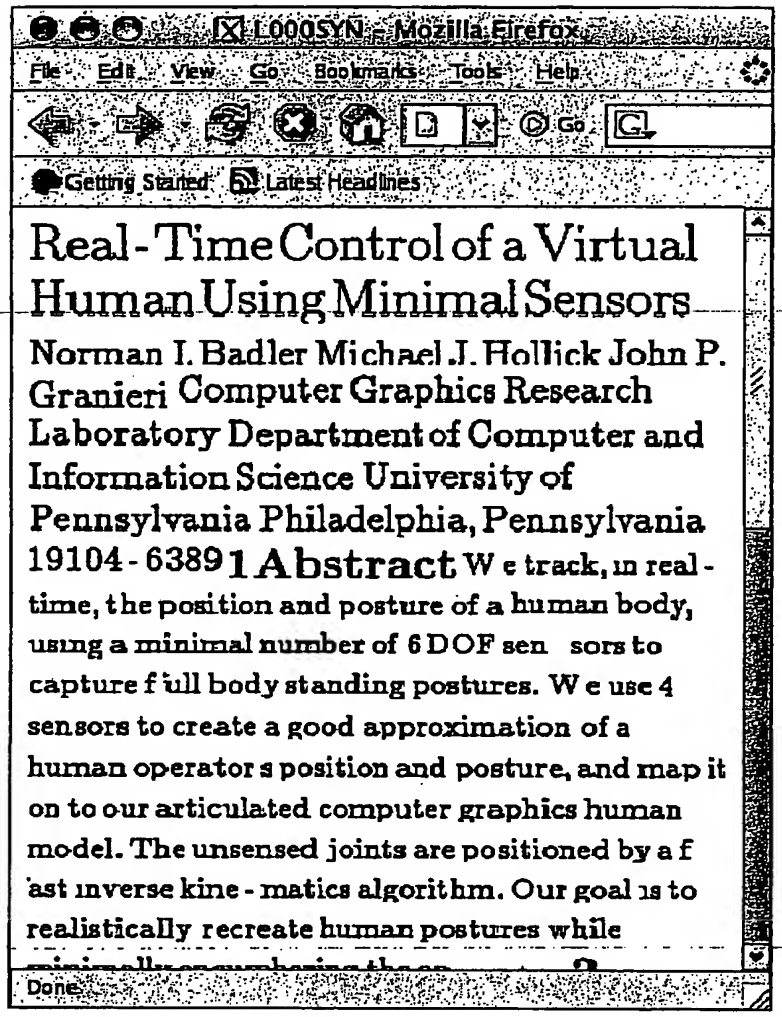
Exhibit B (4)


L000SYN - Mozilla Firefox
File Edit View Go Bookmarks Tools Help
Go
Getting Started
Latest Headlines
Real-Time Control of a Virtual Human Using Minimal Sensors
Norman I. Badler Michael J. Hollick John P. Granieri Computer Graphics Research Laboratory Department of Computer and Information Science University of Pennsylvania Philadelphia, Pennsylvania 19104-6389
1 Abstract
We track, in real-time, the position and posture of a human body, using a minimal number of 6 DOF sensors to capture full body standing postures. We use 4 sensors to create a good approximation of a human operator's position and posture, and map it on to our articulated computer graphics human model. The unsensed joints are positioned by a fast inverse kine-matics algorithm. Our goal is to realistically recreate human postures while
Done

```
/tilde/janssen/projects/ubitext/demonstration 166 % ls
sample.TIF
/tilde/janssen/projects/ubitext/demonstration 167 % ls -l
total 857
-rw-r--r--   1 janssen  parc  438374 Mar  2 16:16 sample.TIF
/tilde/janssen/projects/ubitext/demonstration 168 % ls -l /project/did/src/util/seg
total 383
-rwxr-xr-x   1 tbreuel  parc      80 Mar 11 [redacted] BatchSegmenter.sh
-rwxr-xr-x   1 tbreuel  parc      86 Mar 11 [redacted] InteractiveSegmenter.sh
-rwxr-xr-x   1 tbreuel  parc      72 Mar 11 [redacted] Reflow.sh
-rwxr-xr-x   1 tbreuel  parc      76 Mar 11 [redacted] ReflowHtml.sh
drwxr-xr-x   3 tbreuel  parc   28672 Feb 17 [redacted] data
-rw-r--r--   1 tbreuel  parc  163242 Mar 11 [redacted] seg.jar
-rwxr-xr-x   1 tbreuel  parc    1543 Feb 19 [redacted] show-rect
/tilde/janssen/projects/ubitext/demonstration 169 % ls -l /project/cuda/janssen/seg1/chop.py
-rwxr-xr-x   1 janssen  parc  4310 Mar  6 [redacted] /project/cuda/janssen/seg1/chop.py
/tilde/janssen/projects/ubitext/demonstration 170 % java -Xincgc -Xmx120m -cp /project/did/src/util/seg/seg.jar BatchSegmenter sample.TIF
;;; processing sample.TIF
=== loading tiff file
samplesPerPixel:1, extraSamples:-1, colorChannels:1, photometric:1
samplesPerPixel:1, extraSamples:-1, colorChannels:1, photometric:1
=== computing bounding boxes
setDimensions 2550 3300
imageComplete 3
imageComplete 1
=== starting segmentation
cw = 11 ch = 2
nboxes = 7507
nboxes after removal of small ones = 7507
 rectangles 7507
 neighbors 7733 7592
wordThreshold 46 lineThreshold 63
idotThreshold 4 parThreshold 39
;;;    writing sample.words
;;;    writing sample.pars
;;;    writing sample.lines
;;;    writing sample.xwords
/tilde/janssen/projects/ubitext/demonstration 171 % mkdir reflowed
/tilde/janssen/projects/ubitext/demonstration 172 % python /project/cuda/janssen/seg1/chop.py sample ./reflowed
Converting TIFF file to PNM...
tifftopnm sample.TIF | pnmscale 0.300000 > ./reflowed/sample.pnm
tifftopnm: writing PGM file
...done.
image is 765x990
1:  (169, 148, 186, 159)
2:  (201, 147, 361, 159)
3:  (168, 173, 597, 185)
4:  (596, 180, 599, 185)
5:  (168, 188, 597, 200)
6:  (169, 203, 601, 215)
7:  (168, 218, 600, 230)
8:  (168, 233, 600, 245)
9:  (168, 248, 601, 260)
10:  (168, 263, 600, 275)
11:  (168, 278, 328, 290)
12:  (187, 292, 601, 305)
13:  (169, 308, 601, 320)
14:  (168, 323, 601, 335)
15:  (168, 338, 600, 350)
16:  (169, 352, 601, 365)
17:  (169, 367, 411, 380)
18:  (169, 407, 186, 418)
```

Exhibit C (1)

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19:  (201, 406, 323, 418)
20:  (168, 432, 596, 444)
21:  (596, 439, 599, 444)
22:  (168, 447, 601, 459)
23:  (169, 462, 597, 474)
24:  (169, 477, 600, 489)
25:  (168, 491, 600, 504)
26:  (168, 507, 234, 516)
27:  (187, 522, 601, 534)
28:  (168, 537, 600, 547)
29:  (168, 552, 600, 564)
30:  (169, 567, 601, 579)
31:  (168, 582, 600, 594)
32:  (168, 596, 600, 609)
33:  (168, 612, 601, 624)
34:  (169, 627, 597, 639)
35:  (168, 642, 600, 654)
36:  (168, 657, 562, 669)
37:  (169, 697, 176, 710)
38:  (194, 696, 312, 710)
39:  (169, 729, 600, 741)
40:  (168, 744, 600, 756)
41:  (168, 759, 601, 771)
42:  (169, 774, 600, 786)
43:  (168, 789, 597, 799)
44:  (168, 803, 600, 815)
45:  (168, 818, 592, 830)
/tilde/janssen/projects/ubitext/demonstration 173 % ls -l ./reflowed/
total 1823
-rw-rw-r--   1 janssen  parc  757365 Mar  2 16:37 sample.pnm
-rw-rw-r--   1 janssen  parc     956 Mar  2 16:37 sample1.gif
-rw-rw-r--   1 janssen  parc    4196 Mar  2 16:37 sample10.gif
-rw-rw-r--   1 janssen  parc    2078 Mar  2 16:37 sample11.gif
-rw-rw-r--   1 janssen  parc    4058 Mar  2 16:37 sample12.gif
-rw-rw-r--   1 janssen  parc    4137 Mar  2 16:37 sample13.gif
-rw-rw-r--   1 janssen  parc    4268 Mar  2 16:37 sample14.gif
-rw-rw-r--   1 janssen  parc    4179 Mar  2 16:37 sample15.gif
-rw-rw-r--   1 janssen  parc    4240 Mar  2 16:37 sample16.gif
-rw-rw-r--   1 janssen  parc    2713 Mar  2 16:37 sample17.gif
-rw-rw-r--   1 janssen  parc     969 Mar  2 16:37 sample18.gif
-rw-rw-r--   1 janssen  parc    1814 Mar  2 16:37 sample19.gif
-rw-rw-r--   1 janssen  parc    2290 Mar  2 16:37 sample2.gif
-rw-rw-r--   1 janssen  parc    4188 Mar  2 16:37 sample20.gif
-rw-rw-r--   1 janssen  parc     809 Mar  2 16:37 sample21.gif
-rw-rw-r--   1 janssen  parc    4031 Mar  2 16:37 sample22.gif
-rw-rw-r--   1 janssen  parc    4162 Mar  2 16:37 sample23.gif
-rw-rw-r--   1 janssen  parc    4600 Mar  2 16:37 sample24.gif
-rw-rw-r--   1 janssen  parc    4603 Mar  2 16:37 sample25.gif
-rw-rw-r--   1 janssen  parc    1240 Mar  2 16:37 sample26.gif
-rw-rw-r--   1 janssen  parc    4050 Mar  2 16:37 sample27.gif
-rw-rw-r--   1 janssen  parc    3960 Mar  2 16:37 sample28.gif
-rw-rw-r--   1 janssen  parc    4495 Mar  2 16:37 sample29.gif
-rw-rw-r--   1 janssen  parc    4544 Mar  2 16:37 sample3.gif
-rw-rw-r--   1 janssen  parc    4440 Mar  2 16:37 sample30.gif
-rw-rw-r--   1 janssen  parc    4538 Mar  2 16:37 sample31.gif
-rw-rw-r--   1 janssen  parc    4647 Mar  2 16:37 sample32.gif
-rw-rw-r--   1 janssen  parc    4137 Mar  2 16:37 sample33.gif
-rw-rw-r--   1 janssen  parc    4095 Mar  2 16:37 sample34.gif
-rw-rw-r--   1 janssen  parc    3892 Mar  2 16:37 sample35.gif
-rw-rw-r--   1 janssen  parc    3938 Mar  2 16:37 sample36.gif
-rw-rw-r--   1 janssen  parc     876 Mar  2 16:37 sample37.gif
-rw-rw-r--   1 janssen  parc    1958 Mar  2 16:37 sample38.gif
```

```
-rw-rw-r--   1 janssen  parc    4122 Mar  2 16:37 sample39.gif
-rw-rw-r--   1 janssen  parc     809 Mar  2 16:37 sample4.gif
-rw-rw-r--   1 janssen  parc    4286 Mar  2 16:37 sample40.gif
-rw-rw-r--   1 janssen  parc    4233 Mar  2 16:37 sample41.gif
-rw-rw-r--   1 janssen  parc    4159 Mar  2 16:37 sample42.gif
-rw-rw-r--   1 janssen  parc    4040 Mar  2 16:37 sample43.gif
-rw-rw-r--   1 janssen  parc    4245 Mar  2 16:37 sample44.gif
-rw-rw-r--   1 janssen  parc    4088 Mar  2 16:37 sample45.gif
-rw-rw-r--   1 janssen  parc    4577 Mar  2 16:37 sample5.gif
-rw-rw-r--   1 janssen  parc    4710 Mar  2 16:37 sample6.gif
-rw-rw-r--   1 janssen  parc    4369 Mar  2 16:37 sample7.gif
-rw-rw-r--   1 janssen  parc    4060 Mar  2 16:37 sample8.gif
-rw-rw-r--   1 janssen  parc    4182 Mar  2 16:37 sample9.gif
-rw-rw-r--   1 janssen  parc    2454 Mar  2 16:37 sampledebug.html
-rw-rw-r--   1 janssen  parc    1223 Mar  2 16:37 sampleindex.html
/tilde/janssen/projects/ubitext/demonstration 174 % open sample.TIF reflowed/sampleindex.html
```

3.2 Multi-Document Reading

Because document finding is typically separated from document reading, multiple document reading tasks are particularly difficult in the electronic realm. Many applications provide facilities for navigating between multiple documents of the same type, such as tabs in a web browser. However, reading tasks may involve moving between several types of documents such as web pages, word processing documents, presentation slides, etc. This type of task suggests the need for techniques to transfer attention rapidly among documents, regardless of type, in small working sets.

A related problem is being able to view the pages of multiple documents at once. With paper, this is often accomplished by spreading out documents on a table. Reading applications often provide thumbnail facilities for viewing multiple pages from a single document but not from multiple documents. The ability to do so can be important for making comparisons [15] and for getting an overview of a collection of documents [16].

3.3 Finding Documents

Perhaps the most widely accepted method of finding relevant documents is keyword search. This method has a number of limitations in the case of personal digital libraries. Keyword search is fundamentally a recall-based user interface. A classic principle in user interface design is to minimize the memory load on the user [17]. This is often referred to informally as "supporting recognition rather than recall."

A general problem with keyword search is that a user's vocabulary often does not match the desired document's vocabulary. This means that users may not be able to find certain documents or they may have to experiment with several queries before they find what they want. A number of techniques have been introduced to deal with this problem such as term aliasing or personalizations like those in Haystack [18]. Nevertheless, these heuristics are not likely to work in all cases. It is also often the case that the user is not able to formulate a query at all. Some examples include searching for a picture, a specific page layout, or some other visual property of a document. In these cases, the user needs techniques for interacting with documents visually rather than textually.

4 The *UC* System

The *UC* system developed in our research group integrates a number of recent user interface, information visualization, and digital library techniques with the goal of addressing the problems described in the foregoing. The system is also designed to work well with pen-based tablet computers where traditional user interface controls, such as scrollbars and text boxes, are of limited effectiveness. While the foregoing sections have described the motivation and design rationale for this system, the present section and the next describe the system in detail.

3.2 Multi-Document Reading Because document finding is typically separated from document reading, mul - tiple document reading tasks are particularly difficult in the electronic realm Many applications provide facilities for navigating between multiple documents of the same type, such as tabs in a web browser. However, reading tasks may involve moving between several types of documents such as web pages, word processing documents, presentation slides, etc. This type of task suggests the need for techniques to transfer attention rapidly among documents, regardless of type, in small working sets A related problem is being able to view the pages of multiple documents at once. With paper, this is often accomplished by spreading out documents on a table. Reading applications often provide thumbnail facilities for viewing multiple pages from a single document but not from multiple documents. The ability to do so can be important for making comparisons [15] and for getting an overview of a collection of documents [16] **3.3 Finding Documents** Perhaps the most widely accepted method of finding relevant documents is key - word search. This method has a number of limitations in the case of personal digital libraries. Keyword search is fundamentally a recall-based user interface A classic principle in user interface design is to minimize the memory load on the user [17]. This is often referred to informally as "supporting recognition rather than recall " A general problem with keyword search is that a user's vocabulary often does not match the desired document's vocabulary. This means that users may not be able to find certain documents or they may have to experiment with several queries before they find what they want. A number of techniques have been introduced to deal with this problem such as term aliasing or personalizations like those in Haystack [18]. Nevertheless, these heuristics are not likely to work in all cases. It is also often the case that the user is not able to formulate a query at all. Some examples include searching for a picture, a specific page layout or some other visual property of a document. In these cases, the user needs techniques for interacting with documents visually rather than textually

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Exhibit C (3)

PATENT APPLICATION

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DECLARATION UNDER 37 C.F.R. §1.131

I, Thomas M. BREUEL, a named inventor in the above-identified application, hereby declare and state:

1. This Declaration is submitted as evidence that the subject matter claimed in Claims 1, 3-16 and 18-28 of the above-identified application was conceived by the named inventors and reduced to practice in the United States prior to July 13, 2001, the U.S. filing date of U.S. Patent Application Publication No. 2003/0014445 Al (Formanek et al.).

2. I am a named co-inventor in the above-identified application.

3. I have reviewed the attached Declaration of William C. Janssen Jr., another named co-inventor in the above-identified application, and confirm that, based on information and belief, the assertions made in Mr. Janssen's Declaration are true.

4. I hereby declare that all statements made herein of my own knowledge are true, and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine and/or imprisonment under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity

of the application or any patent issuing therefrom.

Date: April 2, 2007

Thomas M. BREUEL

Attachments:

Declaration of William C. Janssen Jr. dated March 20, 2007

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

Thomas M. BREUEL et al.

Application No.: 10/064,892 Group Art Unit: 2178

Filed: August 27, 2002 Examiner: C. PAULA

Docket No.:111744

For: METHOD AND SYSTEM FOR DOCUMENT IMAGE LAYOUT DECONSTRUCTION AND REDISPLAY SYSTEM

DECLARATION UNDER 37 C.F.R. §1.131

I, Henry S. BAIRD, a named inventor in the above-identified application, hereby declare and state:

1. This Declaration is submitted as evidence that the subject matter claimed in Claims 1, 3-16 and 18-28 of the above-identified application was conceived by the named inventors and reduced to practice in the United States prior to July 13, 2001, the U.S. filing date of U.S. Patent Application Publication No. 2003/0014445 Al (Formanek et al.).

2. I am a named co-inventor in the above-identified application.

3. I have reviewed the attached Declaration of William C. Janssen Jr., another named co-Inventor in the above-identified application, and confirm that, based on information and belief, the assertions made in Mr. Janssen's Declaration are true.

4. I hereby declare that all statements made herein of my own knowledge are true, and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements, and the like, so

made are punishable by fine and/or imprisonment under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing therefrom.

Date: 12 April 2007

Henry S. BAIRD

Attachments:

Declaration of William C. Janssen Jr. dated March 20, 2007

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

Thomas M. BREUEL et al. Group Art Unit: 2178

Application No.: 10/064,892 Examiner: C. PAULA

Filed: August 27, 2002 Docket No.: 111744

For: METHOD AND SYSTEM FOR DOCUMENT IMAGE LAYOUT DECONSTRUCTION AND REDISPLAY SYSTEM

DECLARATION UNDER 37 C.F.R. §1.131

I, Ashok C. POPAT, a named inventor in the above-identified application, hereby declare and state:

1. This Declaration is submitted as evidence that the subject matter claimed in Claims 1, 3-16 and 18-28 of the above-identified application was conceived by the named inventors and reduced to practice in the United States prior to July 13, 2001, the U.S. filing date of U.S. Patent Application Publication No. 2003/0014445 Al (Formanek et al.).

2. I am a named co-inventor in the above-identified application.

3. I have reviewed the attached Declaration of William C. Janssen Jr., another named co-inventor in the above-identified application, and confirm that, based on information and belief, the assertions made in Mr. Janssen's Declaration are true.

4. I hereby declare that all statements made herein of my own knowledge are true, and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements, and the like, so made are punishable by fine and/or imprisonment under Section 1001 of Title 18

of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing therefrom.

Date: 3/24/07

Ashok C. POPAT

Attachments:

Declaration of William C. Janssen Jr. dated March 20, 2007

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

Thomas M. BREUEL et al.

Group Art Unit: 2178

Application No.: 10/064,892

Examiner: C. PAULA

Filed: August 27, 2002

Docket No.: 111744

For: METHOD AND SYSTEM FOR DOCUMENT IMAGE LAYOUT DECONSTRUCTION AND REDISPLAY SYSTEM

DECLARATION UNDER 37 C.F.R. §1.131

I, Dan S. BLOOMBERG, a named inventor in the above-identified application, hereby declare and state:

1. This Declaration is submitted as evidence that the subject matter claimed in Claims 1, 3-16 and 18-28 of the above-identified application was conceived by the named inventors and reduced to practice in the United States prior to July 13, 2001, the U.S. filing date of U.S. Patent Application Publication No. 2003/0014445 A1 (Formanek et al.).

2. I am a named co-inventor in the above-identified application.

3. I have reviewed the attached Declaration of William C. Janssen Jr., another named co-inventor in the above-identified application, and confirm that, based on information and belief, the assertions made in Mr. Janssen's Declaration are true.

4. I hereby declare that all statements made herein of my own knowledge are true, and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements, and the like, so made are punishable by fine and/or imprisonment under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing therefrom.

Date: April 11, 2007

Dan S. BLOOMBERG

Attachments:

Declaration of William C. Janssen Jr. dated March 20, 2007